

APPENDIX P

City of Penticton



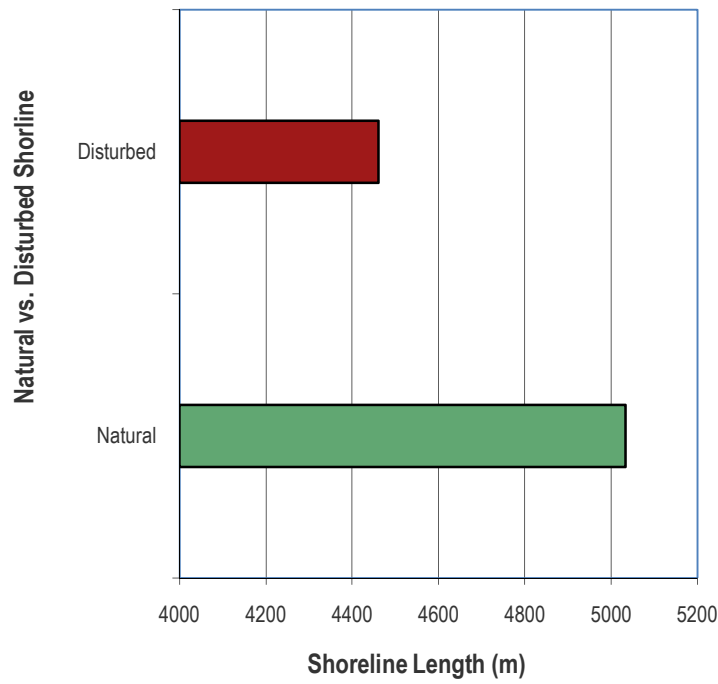


Figure 1: The percent of natural and disturbed shoreline.

Table 1: The total shore length of percentage of shore length along Okanagan Lake

| | % of Shoreline | Shore Length (m) |
|-----------|----------------|------------------|
| Natural | 53.01% | 5033 |
| Disturbed | 46.99% | 4461 |
| Total | | 9493.6 |



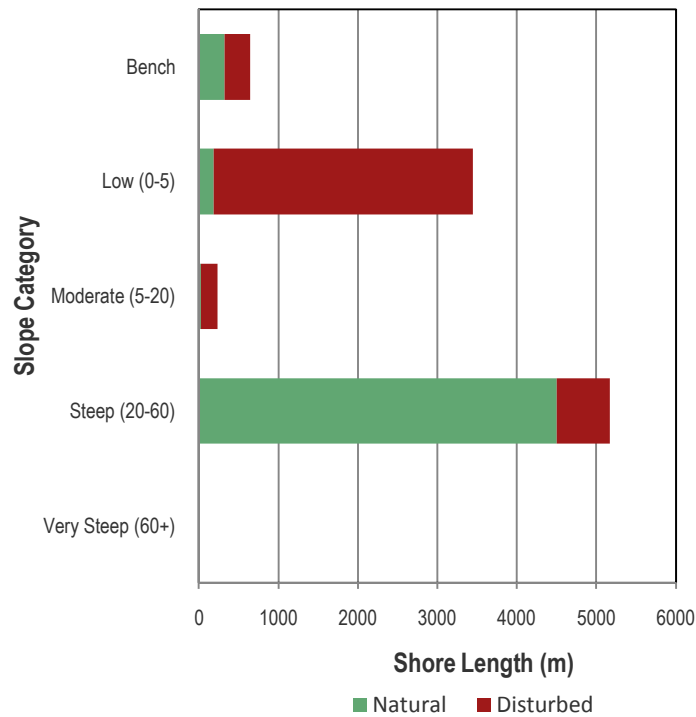


Figure 2: The length of natural and disturbed shorelines in each slope category.

Table 2: The percentage of natural and disturbed shore lengths within each of the different slope categories.

| Slope | % of Total Shore Length | Total Shore Length (m) | Shore Length Natural (m) | Shore Length Disturbed (m) | % Natural | % Disturbed |
|------------------|-------------------------|------------------------|--------------------------|----------------------------|-------------|-------------|
| Very Steep (60+) | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Steep (20-60) | 54.4 | 5167 | 4505 | 662 | 87.2 | 12.8 |
| Moderate (5-20) | 2.5 | 234 | 23 | 211 | 10.0 | 90.0 |
| Low (0-5) | 36.3 | 3450 | 183 | 3267 | 5.3 | 94.7 |
| Bench | 6.8 | 642 | 321 | 321 | 50.0 | 50.0 |
| Total | 100.0 | 9494 | 5033 | 4461 | 53.0 | 47.0 |



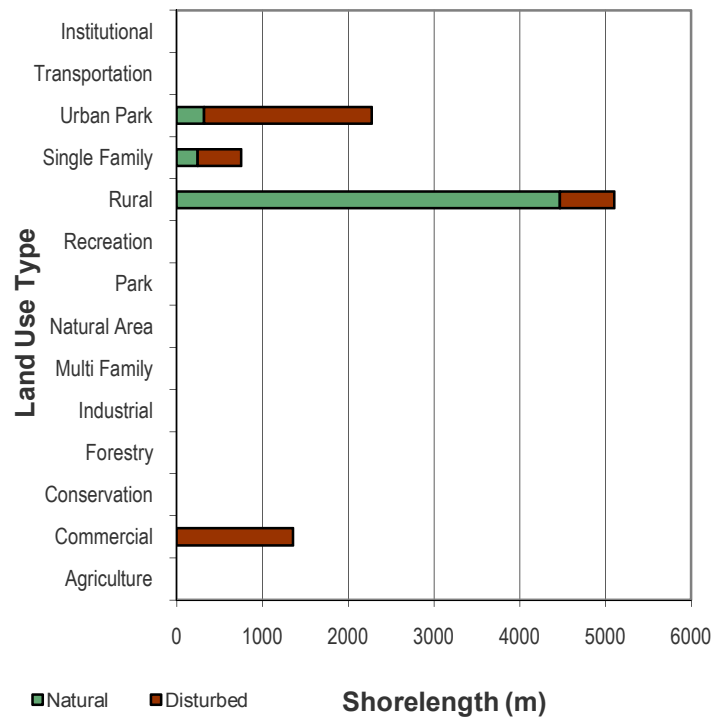


Figure 3: The length of natural and disturbed shoreline in each land use category

Table 3: The total length of natural and disturbed shorelines and their associated land uses around Okanagan Lake

| | % of Shoreline Length | Shoreline Length (m) | Natural Shore Length (m) | Disturbed Shore Length (m) | % Natural | % Disturbed |
|----------------|-----------------------|----------------------|--------------------------|----------------------------|-----------|-------------|
| Agriculture | 0.0% | 0 | 0 | 0 | 0 | 0 |
| Commercial | 14.3% | 1359 | 0 | 1359 | 0.0% | 100.0% |
| Conservation | 0.0% | 0 | 0 | 0 | 0.0% | 0.0% |
| Forestry | 0.0% | 0 | 0 | 0 | 0.0% | 0.0% |
| Industrial | 0.0% | 0 | 0 | 0 | 0.0% | 0.0% |
| Multi Family | 0.0% | 0 | 0 | 0 | 0 | 0 |
| Natural Area | 0.0% | 0 | 0 | 0 | 0.0% | 0.0% |
| Park | 0.0% | 0 | 0 | 0 | 0 | 0 |
| Recreation | 0.0% | 0 | 0 | 0 | 0 | 0 |
| Rural | 53.8% | 5105 | 4467 | 638 | 87.5% | 12.5% |
| Single Family | 7.9% | 754 | 244 | 511 | 32.3% | 67.7% |
| Urban Park | 24.0% | 2275 | 321 | 1953 | 14.1% | 85.9% |
| Transportation | 0.0% | 0 | 0 | 0 | 0 | 0 |
| Institutional | 0.0% | 0 | 0 | 0 | 0.0% | 0.0% |
| Total | 100.0% | 9493.6 | | | | |



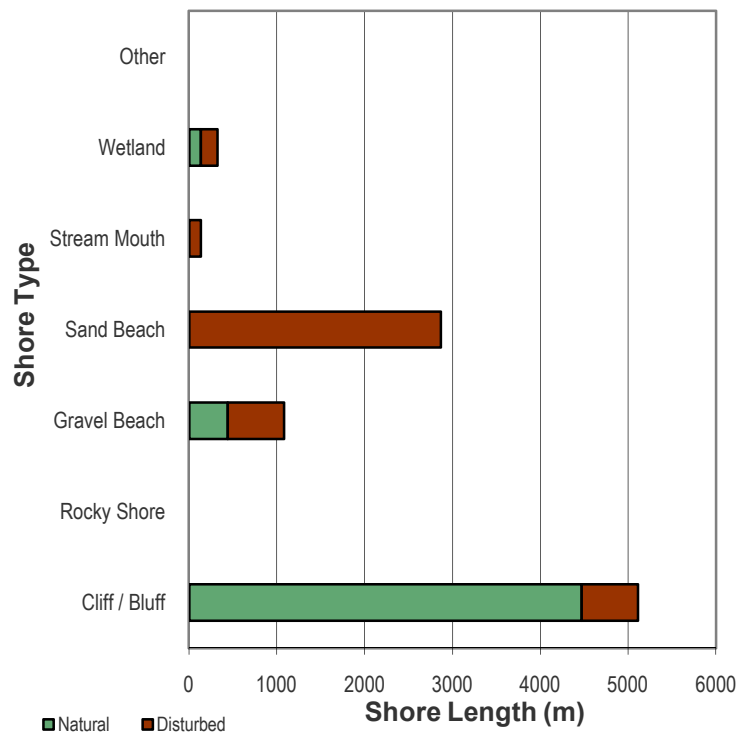


Figure 4: The length of natural and disturbed shoreline in each shore type category

Table 4: The total length of natural and disturbed shoreline and associated percentages within the different shore types that occur around Okanagan Lake

| Shore Type | % of Total | Total Shoreline Length (m) | Natural Shore Length (m) | Disturbed Shore Length (m) | % Natural | % Disturbed |
|---------------|----------------|----------------------------|--------------------------|----------------------------|-----------|-------------|
| Cliff / Bluff | 53.8% | 5105 | 4467 | 637.6 | 87.5% | 12.5% |
| Rocky Shore | 0.0% | 0 | 0 | 0.0 | 0 | 0 |
| Gravel Beach | 11.3% | 1076 | 437 | 639.3 | 40.6% | 59.4% |
| Sand Beach | 30.2% | 2864 | 0 | 2864.1 | 0.0% | 100.0% |
| Stream Mouth | 1.3% | 128 | 0 | 127.6 | 0.0% | 100.0% |
| Wetland | 3.4% | 321 | 128 | 192.5 | 40.0% | 60.0% |
| Other | 0.0% | 0 | 0 | 0.0 | 0 | 0 |
| Total | 100.00% | 9494 | | | | |



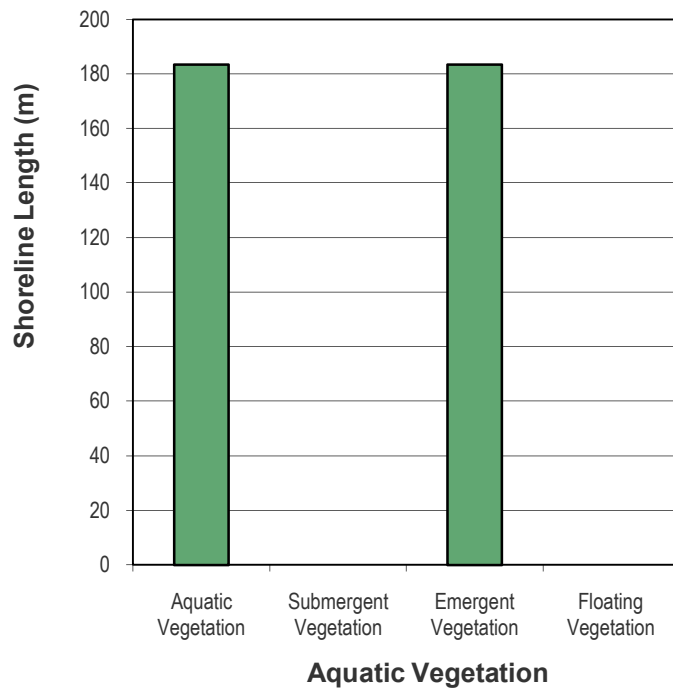


Figure 5: The shore length of each different type of aquatic vegetation.

Table 5: The total shoreline length and percentage that has aquatic, submergent, emergent, and floating vegetation along Okanagan Lake

| Type | % of Total Shoreline Length | Shoreline Length (m) |
|-----------------------|-----------------------------|----------------------|
| Aquatic Vegetation | 1.9% | 183 |
| Submergent Vegetation | 0.0% | 0 |
| Emergent Vegetation | 1.9% | 183 |
| Floating Vegetation | 0.0% | 0 |



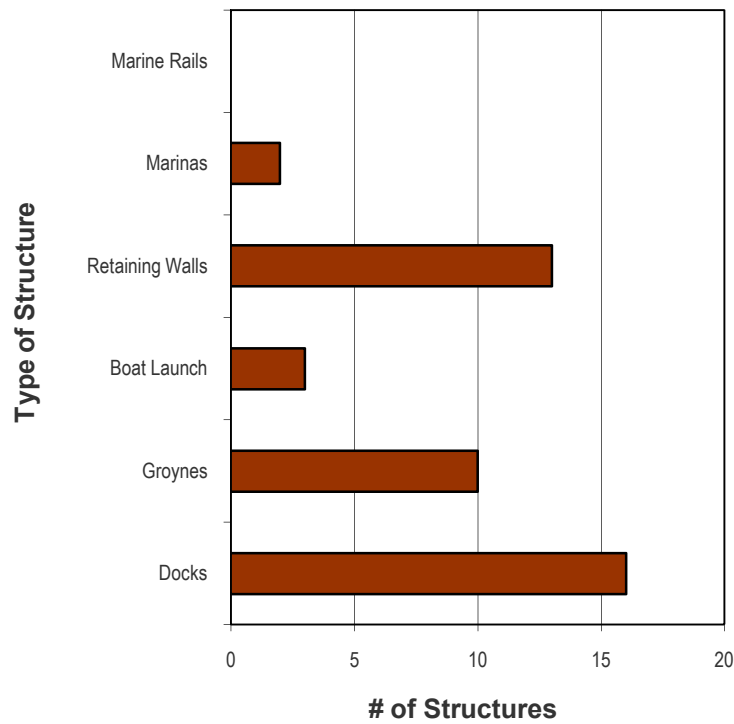
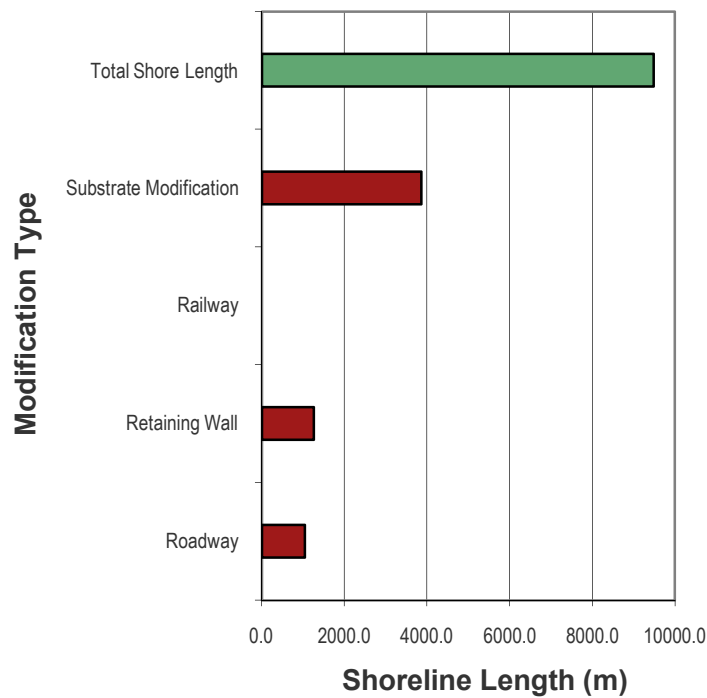


Figure 6: The total number of different types of modifications on Okanagan Lake

Table 6: The total number and density (# per km) of different shoreline modifications occurring around Okanagan Lake

| Type | Total # | # Per km |
|-----------------|---------|----------|
| Docks | 16 | 1.69 |
| Groynes | 10 | 1.05 |
| Boat Launch | 3 | 0.32 |
| Retaining Walls | 13 | 1.37 |
| Marinas | 2 | 0.21 |
| Marine Rails | 0 | 0.00 |



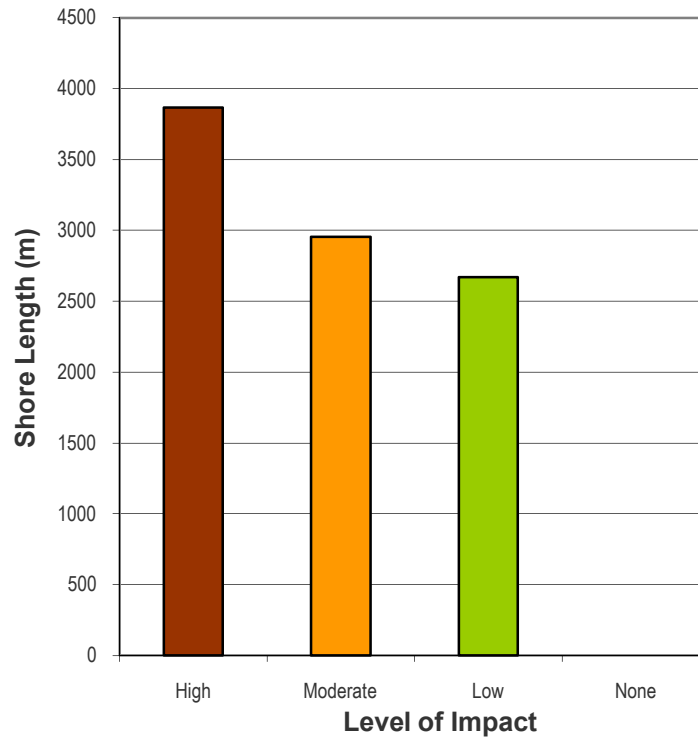


. **Figure 7:** The shore length of different shore modifiers were observed.

Table 7: The approximate shoreline length that has been impacted by substrate modification, road and railways, and retaining walls along Okanagan Lake

| Category | % of Shoreline | Shorelength (m) |
|------------------------|----------------|-----------------|
| Roadway | 11% | 1034.1 |
| Retaining Wall | 13% | 1254.8 |
| Railway | 0% | 0.0 |
| Substrate Modification | 41% | 3862.6 |
| Total Shore Length | | 9493.6 |





. **Figure 8:** The shore length of different levels of impact on Okanagan Lake..

Table 8: The Level of Impact around Okanagan Lake (High > 40%, Moderate (10-40%), Low (<10%), None (0%))

| Level of Impact | % of Shoreline | Shore Length |
|-----------------|----------------|--------------|
| High | 40.75% | 3868 |
| Moderate | 31.11% | 2954 |
| Low | 28.14% | 2672 |
| None | 0.00% | 0 |
| | Shore Length | 9493.6 |



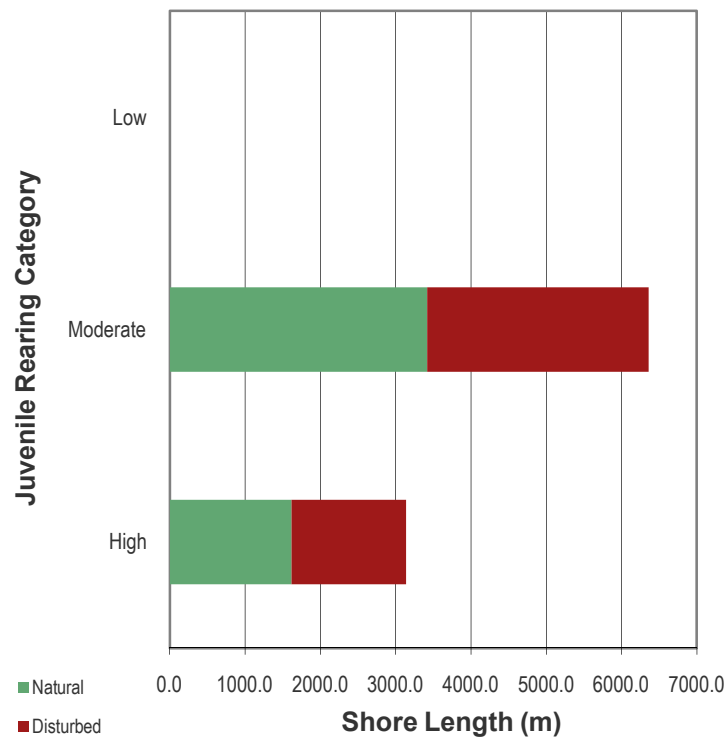


Figure 9: The natural and disturbed shore length of areas classified as having and High, Moderate, or Low Juvenile Rearing ranking.

Table 9: The shore length and percentage of shoreline areas classified as having High, Moderate, or Low Juvenile Rearing Value on Okanagan Lake.

| Juvenile Rearing Category | # of Segments | Shore Length (m or %) | | | | Total |
|---------------------------|---------------|-----------------------|-------------|---------------|---------------|--------|
| | | Natural (m) | Natural (%) | Disturbed (m) | Disturbed (%) | |
| High | 3 | 1618.9 | 51.7% | 1514.6 | 48.3% | 3134.0 |
| Moderate | 7 | 3413.6 | 53.7% | 2946.5 | 46.3% | 6360.7 |
| Low | 0 | 0.0 | 0 | 0.0 | 0 | 0 |



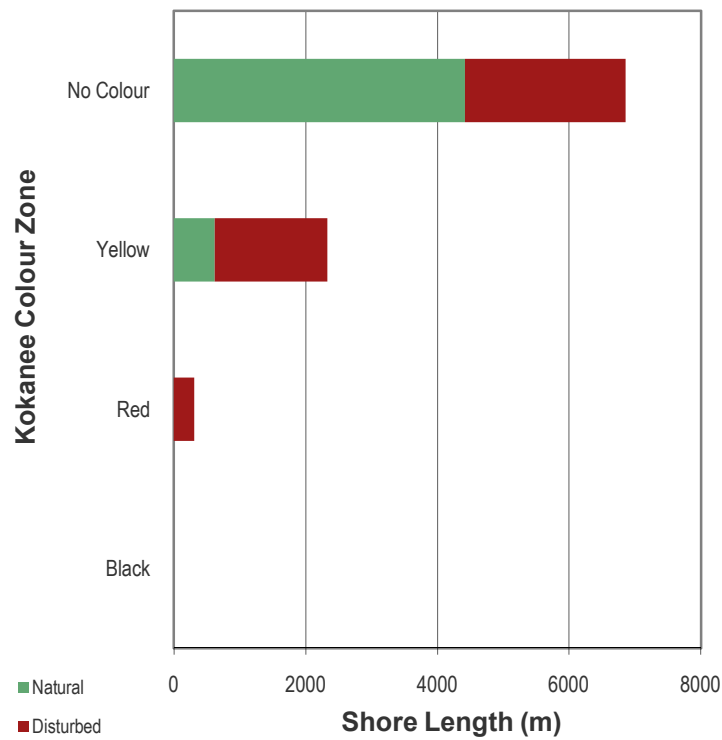


Figure 10: The length of natural and disturbed shoreline in the different shore spawning kokanee zones.

Table 10: The length of natural and disturbed shorelines within the different Okanagan Large Lakes Protocol Kokanee Shore Spawning areas.

| Black | | Red | | Yellow | | No Colour | |
|---------|-----------|---------|-----------|---------|-----------|-----------|-----------|
| Natural | Disturbed | Natural | Disturbed | Natural | Disturbed | Natural | Disturbed |
| 0 | 0 | 0.0% | 100.0% | 26.6% | 73.4% | 64.3% | 35.7% |
| 0 | 0 | 0 | 309 | 619 | 1706 | 4414 | 2446 |



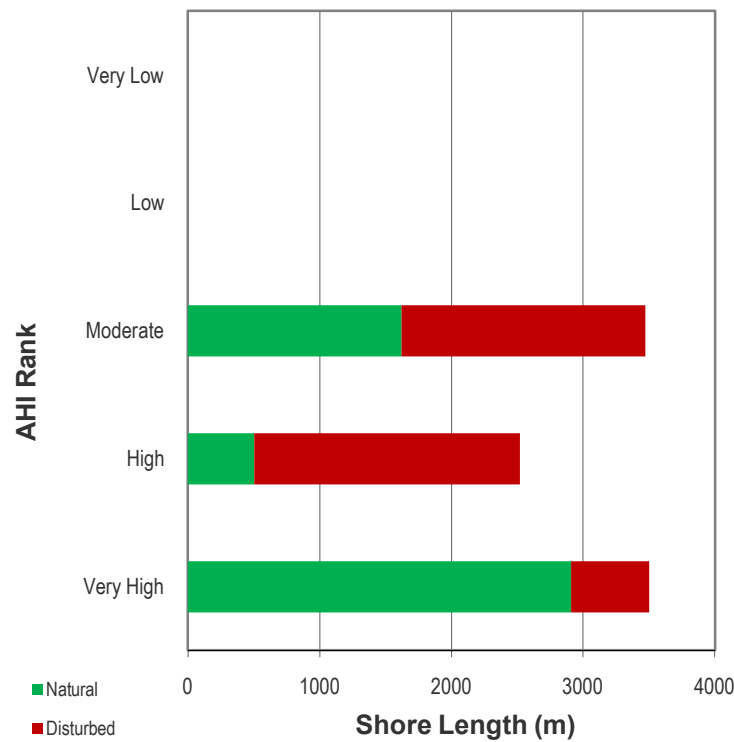


Figure 11: The length of natural and disturbed shoreline in the different AHI rankings.

Table 13: The shoreline that is natural and disturbed (m and %) within each of the different AHI rankings.

| AHI Rank | Natural | | Disturbed | |
|-----------|-------------|-------|-------------|-------|
| | m | % | m | % |
| Very High | 2909.064653 | 83.1% | 593.4646899 | 16.9% |
| High | 504.566172 | 20.0% | 2015.771296 | 80.0% |
| Moderate | 1618.908406 | 46.6% | 1851.860402 | 53.4% |
| Low | 0 | 0 | 0 | 0 |
| Very Low | 0 | 0 | 0 | 0 |

